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AN OUTBREAK OF DERMATITIS AMONG WORKERS IN A RUBBER MANUFACTURING PLANT

By Louis Schwartz, *Senior Surgeon, United States Public Health Service*, and Louis Tulipan, M.D., New York, N.Y.

In a plant employing about 150 workers, engaged in the manufacture of sheet rubber goods, there occurred an outbreak of dermatitis beginning in the early part of September 1932 and continuing into October 1932. Altogether, eight workers were affected.

The first man to become affected was a carpenter and general-utility man. He was 67 years old, and had been employed in the plant at the same occupation for 10 years and had never before had any skin disease. In part his duties were to carry hot rubber strips from the mill, to place them on a table, and then separate them. These rubber strips were carried over his bare arm. He used gloves on his hands.

Following a severe contusion of the right elbow, with skin unbroken (Sept. 6, 1932), on which he applied an unknown solution to bring down the swelling, a dermatitis developed on the right arm and hand. The patient applied no more solution but continued to work. The condition became steadily worse and a few days afterward spread to the left arm and hand. The condition then became so severe that he stopped work for 1 week, during which time the arms and hands so improved that he could resume work. But as soon as he did so the dermatitis again returned and spread to his neck as well. At this time he sought the advice of a physician. He presented a pin-point to pin-head papulo-vesicular eruption with crusting and fissuring of the skin and serous oozing of the hands and forearms, with some patches on the upper arms, chest, and upper part of the back.

Upon being questioned, he stated that he had used some sulphur soap on the inflamed parts and this, no doubt, tended to aggravate the condition. He was given calamine lotion and stopped working until he recovered. Upon his return to work, however, the eruption again reappeared. He was again kept at home, under a mild anti-pruritic lotion, to await the disappearance of the eruption. At the time of this report he had a dry, scaling eczematous condition of the hands and forearms accompanied with itching.

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Another case developed in a man who was employed on a milling machine, mixing compounds into the rubber. He was 59 years old, had worked in the plant for 12 years, and never had any eruption before the present one. On September 24, 1932, he noticed a rash after handling hot rubber, which, upon examination, presented an erythematous papulo-vesicular eruption with scratch marks, some grouping, and fine scales on both forearms from the wrists to the elbows. He stated that he used gloves while working.

Six other cases occurred in workers at the plant, all of whom had worked there for a number of years and had never had eruptions before, except one man employed as a vulcanizer, using the vapor cure method, in which sulphur dichloride (SCl_2) is used and neutralized with ammonia (NH_3). On the fingers and hands were some superficial caustic burns, which he stated that he got from time to time from the irritating sulphur dichloride and ammonia.

The other five cases occurred among the mill men and callender men. (Mill men are men who work on roll mills which mix the rubber with the compounds, and callender men are men who work on roller machines which spread the rubber into thin sheets.)

Out of a total of 8 mill men employed, 4 developed dermatitis, and of the 2 callender men employed, both developed dermatitis.

REPORT ON INVESTIGATION

The plant is a small one, modernly equipped. No medical service is maintained, as the plant is located in the center of a large city and medical service is immediately available in the neighborhood.

An inspection was made of all the workers for the occurrence of dermatitis. During this inspection 75 women and 44 men were examined. Of the women, 68 were between 20 and 34 years of age, and 7 were between 35 and 59 years of age. Of the men, 27 were between 20 and 34 years of age, 15 between 35 and 59 years of age, and 2 over 60 years of age.

All the women except 3 had worked in the plant for more than 1 year, and all the men except 3 had worked in the plant for more than 2 years.

No cases of dermatitis were found among the women, nor were any found among the men working in the plant outside of the occupations of milling and the callender machines, except the small alkali burns on the hands of the vapor curer previously mentioned.

According to the superintendent, no other cases of dermatitis had occurred in this plant during the more than 20 years of its existence.

PROCESS

Crepe rubber is used in the plant and it is milled with lithopone, whiting, magnesium carbonate, and zinc oxide. Coumarin ($C_9H_6O_2$)

a vanilla substitute, had been used in small quantities for the 4 months preceding the investigation as a compound to cover up the rubber odor.

After being milled, the rubber is rolled into thin sheets, which are cut in suitable designs and vapor cured with sulphur dichloride and neutralized with ammonia. Starch is used throughout the plant to keep the rubber from sticking. No accelerators or anti-oxidants are used in this process.

Previous experience had shown that crepe rubber, lithopone, magnesium carbonate, and zinc oxide are rarely, if ever, implicated as the causes of industrial dermatitis. We thought that perhaps the Coumarin might have been the exciting cause, since it had only been in use for about 4 months and was contained in all the stock made by the company, and because cases of vanilla dermatitis (*1*) have been reported.

Therefore, on each of five of the workers who still had an eruption, two patches were placed. One patch contained a 2-percent alcoholic solution of Coumarin and the other, the raw rubber stock, containing lithopone, whiting, magnesium carbonate, zinc oxide, and Coumarin. Patches were not placed on the vapor curer and two men whose eruptions had, by that time, disappeared. The patches were placed on the arms and left on for 24 hours. At the end of that time they were removed, but there was no reaction under any of them.

Further inquiry brought out the fact that, since the latter part of July, the company had been experimenting with the manufacture of rubber-stamp material, and that in this process accelerators and antioxidants were used. Only a small amount of this material had been manufactured up to the date of the outbreak of the dermatitis. The rubber for this purpose was compounded with tetramethylthiuram disulphide and benzothiazyl disulphide, which are accelerators, as well as with another accelerator which is a form of elementary selenium. An antioxidant, Sym. di-beta-napthyl-paraphenylenediamine, was also used.

After this mixture had been milled, it was carried by hand to the callender machines and there rolled into sheets of suitable thickness, to be sold, unvulcanized, to the printers' trade.

All of the men affected with the dermatitis, except the vapor curer, had come in contact with the new product. Consequently, it was determined to "patch" the five men with these chemicals.

DESCRIPTION OF THE CHEMICALS

(NOTE.—This description is taken from the booklet of the firm which manufactures and sells these chemicals. Trade names are not used in the description.)

Accelerator "A" consists essentially of tetramethylthiuram disulphide, $(CH_3)_2N.C(S).S.S.C.(S).N(CH_3)_2$. It is made by oxidizing the addition product of dimethylamine and carbon disulphide. It is

a grayish-white powder, insoluble in water, aqueous acids, or alkalies, and gasoline. It is moderately soluble in alcohols, acetone, ether, and benzol, and freely soluble in chloroform, ethylene dichloride and tetrachlorethane. It has a specific gravity of 1.29 and a melting point of 140–145° C. It is odorless and nondiscoloring.

Accelerator "B" consists essentially of benzothiazyl disulphide, $C_6H_4N{:}C(S).S.S.C(S){:}N.C_6H_4$. It is a light-yellow powder insoluble in water, aqueous alkalies, and gasoline; soluble in alcohols, acetone, ether, benzol, chloroform, ethylene dichloride, and tetrachlorethane. It has a specific gravity of 1.50 and a melting point of about 176° C.

Accelerator "C" is a form of elementary selenium. It is a dark-gray powder with a specific gravity of 4.80 and a melting point of 217° C.

All these are said to be nontoxic.

ANTIOXIDANT

The antioxidant used was Sym. di-beta-napthyl-para-phenylene-diamine. It is a grayish-white powder having a specific gravity of 1.20 and a melting point between 230° and 235° C. It is insoluble in water, very slightly soluble in alcohol and gasoline, and moderately soluble in benzene, acetone, and carbon disulphide.

PATCH TESTS

Five patches were applied on each man—1 patch of each of the 4 compounds and 1 containing a mixture of all the compounds. The powder was put on a moistened piece of gauze, which was placed on the patient's back, covered with a layer of rubber dam, then a layer of flannel, and sealed with an adhesive patch. The patches were left on for 24 hours. The results were as follows:

The carpenter and general-utility man showed a + reaction to Accelerator "A" and a + reaction to the antioxidant. The patch containing the mixture of chemicals fell off soon after it was put on.

One mill man showed a + reaction to Accelerator "A" and a + reaction to the mixture of all the compounds.

One callender worker showed a + reaction to Accelerator "A" and a + reaction to the mixture of all compounds, and the other callender man showed + reactions under all five patches.

The fifth man "patched", a mill man, showed no reaction under any of the patches. This man had only a very mild eruption, consisting of a few vesicles on the right elbow which had disappeared after a few days and were not present at the time that he was patched with the accelerators and antioxidant.

DISCUSSION

This company, which had been in existence over 20 years, and engaged in the manufacture of a rubber product without the use of

accelerators or antioxidants, and in vapor curing, had never known of dermatitis occurring among its employees previous to the present outbreak.

About 2 weeks after it began the manufacture of a new rubber product containing three accelerators and an antioxidant, there developed an outbreak of dermatitis among the men handling this new product. None of the employees who did not handle this product developed dermatitis.

Patch tests on 5 of those who had the dermatitis at the time the investigation was begun showed that 4 of them were sensitive to Accelerator "A" and one was also sensitive to the antioxidant used. One was sensitive to all the accelerators and to the antioxidant. The one man who showed no reaction under the patches was entirely cured of his eruption at the time when the patches of accelerators and antioxidant were applied.

Patch tests with Coumarin were negative in all cases.

From these facts it seems reasonable to deduce that the outbreak of dermatitis in this plant was mostly due to hypersensitivity of the affected men to the accelerators and the antioxidant, especially to Accelerator "A." This accelerator has been implicated before as the cause of dermatitis (*2*).

All cases except one, the carpenter and general utility man, had fully recovered and were at work at the time when this report was written (November 1932). They have either developed an immunity against the chemicals or the onset of cooler weather may have stopped the action of the chemicals on the skin. The fact that one of the mill men showed no reaction to the patch test shows that he is now immune.

It has been noted in other cases of occupational dermatitis that continued exposure will, in some cases, cause an immunity that lasts for a short time. In many occupations the onset of cool weather greatly lessens the number of cases of dermatitis.

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A NOTE ON THE FOOD HABITS OF COLPIDIUM

By. C. T. Butterfield, *Principal Bacteriologist, Stream Pollution Investigations, United States Public Health Service*

Purdy and Butterfield (1918), in presenting their study on the effect of plankton animals upon bacterial death rates, showed that bacter a-free protozoa (Paramoecia and Colpidia) when inoculated into sterilized sewage, fail to grow, and die out in a few days. Their results indicate also that some of the protozoa (particularly *Colpidium*) will flourish in pure water containing bacterial cells as the only source of food.

Butterfield (1929b), in discussing the re'ation between the food concentrat on in liquid media and bacterial growth, suggests that there is a definite relationship between the size of the individual cell and the minimum concentration of dissolved, available food required to produce growth. His results show that *Bact. aerogenes* grows well

in media containing only 5 milligrams of food per liter, while *Colpidium*, a much larger organism, requires a concentration of at least 500 milligrams per liter to stimulate growth. However, when these two organisms are both introduced into media containing only 5 milligrams of food per liter, both flourish. As *Colpidium* does not start to grow until the bacteria have reached considerable numbers, Butterfield suggests that the bacteria act as "accumulators" or "concentrators" of the food which is too dilute to stimulate growth of the *Colpidium*.

Butterfield, Purdy, and Theriault (1931), in their study of the influence of the plankton on the biochemical oxidation of organic matter, found that *Colpidium* growing in pure bacteria-free culture in concentrated media use up oxygen, but only in relatively small amounts. From their results they conclude that the chief function of the plankton in the biochemical oxidation process is to reduce the bacterial population below the saturation point and thus to provide conditions suitable for continuous bacterial multiplication with its accompanying oxidative effect.

These findings, which have been reviewed, indicate quite clearly that *Colipidium* will not grow in dilute media in the absence of bacteria but will grow well in it when bacteria are present. In fact, this organism will grow in the absence of all other sources of food if bacteria are present in sufficient numbers. In addition, it has been observed that in dilute media *Colpidium* does not increase until the bacteria have reached appreciable numbers, and that concurrent with the increase of the *Colpidium* the bacteria decrease. These facts show definitely that *Colpidium* can depend upon bacterial cells as a sole source of food and that they utilize them when they are available.

The results thus far reported, however, do not indicate whether the dilute media, after it has been worked over and altered by the bacteria, may not then contain end products of bacterial metabolism which would serve as available food for the *Colpidium* if the bacterial cells as such were excluded. As this information concerning the suitability of the end products of bacterial metabolism as a source of food supply for *Colpidium* might be of considerable value in interpreting the results obtained and in adjusting conditions to favor the natural purification process, experimental tests have been designed and observations have been made to determine the availability of dilute media, after it has been subjected to bacterial action, as a food supply for *Colpidium*.

Dilute media, containing 5 milligrams each of dextrose and peptone per liter of distilled water, buffered at pH 7.2 with phosphate, were prepared in accordance with the directions given by Butterfield (1929a). The medium was filtered and placed in 150-cubic centimeter amounts in Pyrex Erlenmeyer flasks. After sterilization, each flask was inoculated with *Bact. aerogenes*, using the same

amount of inoculum in each case. The flasks were designated by letters A to G, inclusive, and were stored at 20° C. in the dark. Daily examinations were made to determine the bacterial content.

At the end of the third day the bacterial cells were removed from the contents of flasks A, B, C, F, and G by double filtration through Berkefeld filters, first through a filter of normal porosity (grade N) and then through a very dense filter (grade W). The filtrate, presumedly free from bacterial cells, was redistributed into sterile Pyrex Erlenmeyer flasks, similiarly marked, and all of the flasks, including D and E, whose contents were not filtered, were inoculated with the same amount of bacteria-free *Colpidium* culture. The amount of inoculum added was sufficient to produce a *Colpidium* content of about one per cubic centimeter in each instance. The samples were again incubated at a temperature of 20° C., and frequent examinations were made to determine both the bacteria and the *Colpidium* present.

After an additional incubation of 4 days, no increase in numbers of *Colpidium* having been observed in any of the flasks that were free from bacteria, flasks A, B, and C were reinoculated with *Bact. aerogenes*. No change was made in the condition of any of the other samples. Storage of all flasks at 20° C. was continued, and examinations for bacteria and *Colpidium* were made at frequent intervals. The results obtained from this series of tests are set forth in the accompanying table.

From these results it is noted that *Bact. aerogenes* grew well in this dilute media in all instances reaching an average limiting number of 6,530,000 cells per cubic centimeter in 2 days and of 7,390,000 in 3 days. This is in good agreement with the results previously obtained with this media and bacterium. The *Colpidium* d'd not increase in numbers in any of the flasks from which the bacteria had been removed by filtration as long as they remained bacteria-free. This was true of flasks A, B, and C for a 4-day period and of F and G for a 12-day interval. In the case of flasks D and E, where the bacteria were not removed, the *Colpidium* grew well and soon reached their usual limiting number. In flasks A, B, and C, the *Colpidium* failed to grow for 4 days in the absence of bacterial cells but did grow in a normal manner when the bacterial cells were returned. Thus Berkefeld filtration of the bacterial cultures did not introduce any inhibitory effect or remove any growth-supporting property of the media which was not restored with the restoration of the bacterial cells.

The results of this series of experiments would indicate quite definitely, therefore, that, at least under the conditions of these tests, *Colpidium* does not utilize the end products of bacterial metabolism as a source of food but rather depends upon the bacterial cells as such.

Interactivity of Bact. aerogenes and Colpidium—Growth of Colpidium in media from which Bact. aerogenes have been removed by filtration after the bacteria had been growing in the media for 3 days

Time, in days	Flask A		Flask B		Flask C		Flask D		Flask E		Flask F		Flask G	
	Bacteria per cc	Colpidium per cc	Bacteria per cc	Colpidium per cc	Bacteria per cc	Colpidium per cc	Bacteria per cc	Colpidium per cc	Bacteria per cc	Colpidium per cc	Bacteria per cc	Colpidium per cc	Bacteria per cc	Colpidium per cc
0	680	None	680	None	680	None	680	None	680	None	680	None	680	None
1	48,000	None	19,100	None	15,600	None	11,400	None	11,800	None	18,800	None	34,600	None
2	10,000,000	None	7,050,000	None	5,800,000	None	2,790,000	None	7,050,000	None	5,650,000	None	6,850,000	None
3	7,450,000	None	7,450,000	None	6,600,000	None	6,850,000	None	7,800,000	None	8,150,000	None	7,450,000	None
3[1]	[1] None	1	[1] None	1	[1] None	1	6,850,000	1	7,800,000	1	[1] None	1	[1] None	1
4	None	<1	None	<1	None	1	----------	2	----------	3	None	1	None	<1
5	None	----------	None	----------	None	----------	----------	----------	----------	----------	None	----------	None	----------
6	None	<1	None	<1	None	<1	2,530,000	500	2,990,000	612	None	<1	None	<1
7	None	<1	None	1	None	<1	1,690,000	860	1,720,000	660	None	<1	None	1
7[2]	[2] 145,000	<1	[2] 151,000	1	[2] 133,000	<1	1,690,000	860	1,720,000	660	None	<1	None	1
8	725,000	2	555,000	3	525,000	1	1,310,000	600	1,400,000	730	None	1	None	<1
9	2,650,000	5	1,860,000	5	1,460,000	2	805,000	900	825,000	580	None	<1	None	1
10	2,630,000	62	2,420,000	30	2,060,000	58	475,000	590	675,000	670	None	<1	None	1
11	1,410,000	465	1,550,000	240	1,440,000	630	322,000	630	560,000	650	None	<1	None	1
13	455,000	600	645,000	370	475,000	370	296,000	450	495,000	410	None	<1	None	1
15	77,500	960	263,000	790	122,000	460	171,000	260	250,000	290	None	<1	None	<1

[1] At the end of the 3-day period the contents of flasks A, B, C, F, and G, were filtered through Berkefeld N and W grade filters and the filtrate was placed in sterile flasks marked as before. All flasks, including D and E, were inoculated with bacteria-free *Colpidium* at the same time.

[2] At this time, 7 days from the start of the tests, flasks A, B, and C, were again inoculated with *Bact. aerogenes*, while the other flasks D, E, F, and G, were not altered.

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WHOLE-TIME COUNTY HEALTH OFFICERS, 1933

This directory has been compiled from data furnished as of January 1, 1933, by State health officers. Similar directories for the years 1922 to 1931, inclusive, have been published in the Public Health Reports. The directory for 1931 was issued as Reprint No. 1523.

In the questionnaire sent out for the purpose of obtaining the necessary information, a "whole-time" county health officer was defined as "one who does not engage in the practice of medicine or in any other business but devotes all his time to official duties."

Directories of State health departments have been published annually by the Public Health Service for the years 1912 to 1931, inclusive. The directory for 1931 was issued as Reprint No. 1522 from the Public Health Reports.

Directories of city health officers have been published annually for the years 1916 to 1931, inclusive, the directory for 1931 being Reprint No. 1521.

(Owing to lack of available funds for printing requirements, none of these directories was printed for 1932.)

State and county	Name of health officer	Post-office address	Official title
Alabama:			
Baldwin	J. Chason, M.D.	Bay Minette	County health officer.
Barbour	E. M. Moore, M.D.	Clayton	Do.
Blount	C. V. Hendrix, M.D.	Oneonta	Do.
Bullock	J. E. McClellan, M.D.	Union Springs	Do.
Calhoun	G. A. Cryer, M.D.	Anniston	Do.
Chambers	C. S. Cotlin, Jr., M.D.	Lafayette	Do.
Cherokee	S. C. Tatum, M.D.	Center	Do.
Choctaw	W. G. Carnathan, M.D.	Butler	Do.
Clarke	R. D. Neal, M.D.	Grove Hill	Do.
Cleburne	F. R. Wood, M.D.	Heflin	Do.
Coffee	W. A. Stanley, M.D.	Enterprise	Do.
Colbert	W. T. Burkett, M.D.	Tuscumbia	Do.
Conecuh	E. L. Kelly, M.D.	Evergreen	Do.
Covington	F. H. Boyd, M.D.	Andalusia	Do.
Crenshaw	J. O. Foster, M.D.	Luverne	Do.
Cullman	M. S. Whiteside, M.D.	Cullman	Do.
Dale	W. L. Orr, M.D.	Ozark	Do.

State and county	Name of health officer	Post-office address	Official title
Alabama—Continued			
Dallas	L. T. Lee, M.D.	Selma	County health officer.
De Kalb	Lee Weathington, M.D.	Fort Payne	Do.
Elmore	W. S. Owsley, M.D.	Wetumpka	Do.
Escambia	George T. Rowe, M.D.	Brewton	Do.
Etowah	C. L. Murphree, M.D.	Gadsden	Do.
Franklin	N. P. Underwood, M.D.	Russellville	Do.
Geneva	L. S. Nichols, M.D.	Geneva	Do.
Houston	F. G. Granger, M.D.	Dothan	Do.
Jackson	Lucian Newman, M.D.	Scottsboro	Do.
Jefferson	J. D. Dowling, M.D.	Birmingham	Do.
Lauderdale	W. D. Hubbard, M.D.	Florence	Do.
Lawrence	R. E. Harper, M.D.	Moulton	Do.
Lee	A. H. Graham, M.D.	Opelika	Do.
Limestone	W. J. Donald, M.D.	Athens	Do.
Lowndes	E. F. Leatherwood, M.D.	Hayneville	Do.
Macon	Murray Smith, M.D.	Tuskegee	Do.
Madison	W. C. Hatchett, M.D.	Huntsville	Do.
Marengo	E. T. Norman, M.D.	Linden	Do.
Marion	L. L. Parks, M.D.	Hamilton	Do.
Marshall	H. H. Awtrey, M.D.	Guntersville	Do.
Mobile	C. A. Mohr, M.D.	Mobile	Do.
Monroe	T. E. Tucker, M.D.	Monroeville	Do.
Montgomery	J. L. Bowman, M.D.	Montgomery	Do.
Morgan	H. C. McRee, M.D.	Decatur	Do.
Perry	J. R. Long, M.D.	Marion	Do.
Pickens	J. L. Conyers, M.D.	Carrollton	Do.
Pike	W. H. Abernethy, M.D.	Troy	Do.
Shelby	J. M. Kimmey, M.D.	Columbiana	Do.
Sumter	J. S. Hough, M.D.	Livingston	Do.
Talladega	J. H. Hill, M.D.	Talladega	Do.
Tallapoosa	C. C. Fargason, M.D.	Dadeville	Do.
Tuscaloosa	A. A. Kirk, M.D.	Tuscaloosa	Do.
Walker	A. M. Waldrop, M.D.	Jasper	Do.
Washington	I. C. Sumner, M.D.	Chatom	Do.
Wilcox	E. L. McIntosh, M.D.	Camden	Do.
Arizona:			
Cochise	R. B. Durfee, M.D.	Bisbee	Director.
Gila	A. C. McKean, M.D.	Globe	Do.
Maricopa	A. N. Crain, M.D.	Phoenix	Do.
Pima	Lewis H. Howard, M.D.	Tucson	Do.
Arkansas:			
Ashley	A. M. Gibbs, M.D.	Hamburg	County health officer.
Clark	T. T. Ross, M.D.	Arkadelphia	Director county health unit.
Conway	W. H. Bruce, M.D.	Morrilton	County and city health officer.
Crittenden	B. M. Stevenson, M.D.	Marion	County health officer.
Cross	J. D. McKie, M.D.	Wynne	Do.
Garland	J. F. Merritt, M.D.	Hot Springs	Do.
Jackson	M. B. Owens, M.D.	Newport	Do.
Jefferson	George A. Hays, M.D.	Pine Bluff	Do.
Little River	J. W. Ringgold, M.D.	Ashdown	Do.
Lonoke - Prairie - Arkansas.[1]	F. A. Corn, Jr., M.D.	Lonoke	Director of district.
Mississippi	A. M. Washburn, M.D.	Blytheville	County health officer.
Monroe	C. A. Henry, M.D.	Clarendon	Do.
Ouachita	R. C. Kennerly, M.D.	Camden	Do.
Phillips	W. B. Bruce, M.D.	Helena	Do.
Pope	A. B. Tate, M.D.	Russellville	Do.
Pulaski	J. A. Summers, M.D.	Little Rock	Do.
Saline	T. C. Watson, M.D.	Benton	Do.
Sebastian	J. E. Johnson, M.D.	Fort Smith	Do.
Woodruff	J. F. Hays, M.D.	Augusta	Do.
Yell	T. J. Pool, M.D.	Ola	Do.
California:			
Contra Costa	W. A. Powell, M.D.	Martinez	Do.
Imperial	Warren F. Fox, M.D.	El Centro	Do.
Los Angeles	John L. Pomeroy, M.D.	Los Angeles	Do.
Madera	Lee A. Stone, M.D.	Madera	Do.
Monterey	Roy M. Fortier, M.D.	Salinas	Do.
Orange	K. H. Sutherland, M.D.	Santa Ana	Do.
Riverside	W. B. Wells, M.D.	Riverside	Do.
San Bernardino	E. B. Godfrey, M.D.	San Bernardino	Do.
San Diego	Alex M. Lesem, M.D.	San Diego	Do.
San Joaquin	John J. Sippy, M.D.	Stockton	Do.
San Luis Obispo	Allen F. Gillihan, M.D.	San Luis Obispo	Do.
Santa Barbara	R. C. Main, M.D.	Santa Barbara	Do.
Stanislaus	E. F. Reamer, M.D.	Modesto	Do.
Yolo	Fred R. Fairchild, M.D.	Woodland	Do.
Connecticut:			
Fairfield	Lawrence E. Poole, M.D.	Fairfield	Health officer.
Hartford	Theodore F. Foster, M.D., M.P.H.	West Hartford	Superintendent of health.

[1] Tricounty project.

State and county	Name of health officer	Post-office address	Official title
Delaware:			
Kent	E. F. Smith, M.D.	Dover	County unit officer.
New Castle	J. R. Downes, M.D.	Newark	Do.
Sussex	J. B. Derrickson, M.D.	Georgetown	Do.
Florida:			
Escambia	W. A. McPhaul, M.D.	Pensacola	County health officer.
Leon	L. J. Graves, M.D.	Tallahassee	Do.
Taylor	Walton H. Y. Smith, M.D	Perry	Do.
Georgia:			
Baldwin	O. F. Moran, M.D.	Milledgeville	Commissioner of health.
Bartow	A. C. Shamblin, M.D.	Cartersville	Do.
Bibb	J. D. Applewhite, M.D.	Macon	Do.
Brooks	O. L. Von Canon, M.D.	Quitman	Do.
Chatham	V. H. Bassett, M.D.	Savannah	Do.
Clarke	W. W. Browne, M.D.	Athens	Do.
Cobb	J. E. Lester, M.D.	Marietta	Do.
Colquitt	T. H. Chesnutt, M.D.	Moultrie	Do.
Decatur	M. A. Fort, M.D.	Bainbridge	Do.
De Kalb	J. R. Evans, M.D.	Decatur	Do.
Dougherty	Hugo Robinson, M.D.	Albany	Do.
Floyd	B. V. Elmore, M.D.	Rome	Do.
Fulton	Wm. N. Adkins, M.D.	Atlanta	Do.
Glynn	H. L. Akridge, M.D.	Brunswick	Do.
Grady	J. R. Dykes, M.D.	Cairo	Do.
Hall	C. J. Wellborn, M.D.	Gainesville	Do.
Jefferson	L. R. Bryson, M.D.	Louisville	Do.
Jenkins	Guy G. Lunsford, M.D.	Millen	Do.
Laurens	O. H. Cheek, M.D.	Dublin	Do.
Lowndes	G. T. Crozier, M.D.	Valdosta	Do.
Mitchell	C. O. Rainey, M.D.	Camilla	Do.
Richmond	H. Grady Callison, M.D.	Augusta	Do.
Spalding	W. C. Humphries, M.D.	Griffin	Do.
Sumter	A. J. Davis, M.D.	Americus	Do.
Thomas	H. B. Jenkins, M.D.	Thomasville	Do.
Troup	S. C. Rutland, M.D.	Lagrange	Do.
Ware	Geo. E. Atwood, M.D.	Waycross	Do.
Washington	O. L. Rogers, M.D.	Sandersville	Do.
District health unit no. 1. Catoosa. Dade. Walker.	Fred H. Simonton, M.D.	LaFayette	District commissioner of health.
Idaho:			
Twin Falls	George C. Halley, M.D.	Twin Falls	County health officer.
Illinois:			
Du Page	W. V. Hopf, D.D.S.	Wheaton	County health officer.
Iowa:			
Des Moines	Finis Suggett, M.D.	Burlington	Director.
Washington	H. L. Hendricks, M.D.	Washington	Do.
Woodbury	W. S. Petty, M.D.	Sioux City	Do.
Kansas:			
Brown	Claude P. Fryer, M.D.	Hiawatha	County health officer.
Geary	Harry R. Ross, M.D.	Junction City	Do.
Lyon	C. Herbert Munger, M.D.	Emporia	Do.
Marion	J. H. Saylor, M.D.	Marion	Do.
Sedgwick	C. R. Hepler, M.D.	Wichita	Do.
Shawnee	Frank E. McCord, M.D.	Topeka	Do.
Kentucky:			
Adair	Gradie R. Rowntree, M.D.	Columbia	Do.
Allen	C. W. Holland, M.D.	Scottsville	Do.
Anderson	S. R. Boggess, M.D.	Lawrenceburg	Do.
Barren	Chas. M. Moore, M.D.	Glasgow	Do.
Bath	J. S. Goodpaster, M.D.	Owingsville	Do.
Bell	M. D. Hoskins, M.D.	Pineville	Do.
Boyd	R. D. Higgins, M.D.	Ashland	Do.
Breathitt	O. M. Goodloe, M.D.	Jackson	Do.
Bullitt	G. W. Kirk, M.D.	Shepherdsville	Do.
Butler	C. C. Threlkel, M.D.	Morgantown	Do.
Caldwell	A. Y. Covington, M.D.	Princeton	Do.
Calloway	Jas. A. Outland, M.D.	Murray	Do.
Carlisle	J. F. Harrell, M.D.	Bardwell	Do.
Carter	Robt. G. Townsend, M.D.	Grayson	Do.
Casey	J. W. Scudder, M.D.	Liberty	Do.
Clinton	J. Leland Tanner, M.D.	Albany	Do.
Daviess	G. L. Thompson, M.D.	Owensboro	Do.
Edmonson	Sidney Simpson, M.D.	Brownsville	Do.
Elliott	Orris Gearheart, M.D.	Sandy Hook	Do.
Estill	S. T. Scrivner, M.D.	Irvine	Do.
Fayette	W. N. Lipscomb, M.D.	Lexington	Do.
Fleming	J. B. O'Bannon, M.D.	Flemingsburg	Do.
Floyd	Marvin Ransdell, M.D.	Prestonsburg	Do.
Fulton	Hugh E. Prather, M.D.	Hickman	Do.
Gallatin	J. H. Hutchings, M.D.	Warsaw	Do.
Grant	N. H. Ellis, M. D.	Williamstown	Do.
Grayson	C. F. Blankenship, M.D.	Leitchfield	Do.
Green	M. W. Williamson, M.D.	Greensburg	Do.

State and county	Name of health officer	Post-office address	Official title
Kentucky—Continued			
Greenup	Carl M. Gambill, M.D.	Greenup	County health officer.
Hancock		Hawesville	Do.
Hart	Chas. P. Shields, M.D.	Munfordville	Do.
Henderson	R. K. Galloway, M.D., M.P.H.	Henderson	Do.
Hickman	Chas. Hunt, M.D.	Clinton	Do.
Hopkins	C. R. Morton, M.D.	Madisonville	Do.
Jackson	C. A. Wathen, M.D.	McKee	Do.
Jefferson	E. P. Whistler, M.D.	Louisville	Do.
Kenton	H. C. White, M.D.	Covington	Do.
Knott	J. W. Duke, M.D.	Hindman	Do.
Knox	Chas. D. Cawood, M.D.	Barbourville	Do.
Laurel	G. S. Brock, M.D.	London	Do.
Lawrence	J. G. Carter, M.D.	Louisa	Do.
Lee	E. M. Brown, M.D.	Beattyville	Do.
Leslie	Carl R. Bogardus, M.D.	Hyden	Do.
Letcher	R. D. Collins, M.D.	Whitesburg	Do.
Lewis	J. L. Cox, M.D.	Vanceburg	Do.
Lincoln	J. C. McGuire, M.D.	Stanford	Do.
Madison	H. G. Wells, M.D.	Richmond	Do.
Magoffin	Burman H. Preston, M.D.	Salyersville	Do.
Marshall	S. L. Henson, M.D.	Benton	Do.
Martin	Wm. N. Keith, M.D.	Inez	Do.
Mason	Allen F. Murphy, M.D.	Maysville	Do.
McCreary	F. W. Wilt, M.D.	Whitley City	Do.
McLean	J. F. Cadden, M.D.	Calhoun	Do.
Meade	Earl Blair, M.D.	Brandenburg	Do.
Menifee	E. T. Riley, M.D.	Frenchburg	Do.
Metcalfe	Wm. M. Ison, M.D.	Edmonton	Do.
Monroe	Geo. W. Bushong, M.D.	Tompkinsville	Do.
Morgan	W. H. Wheeler, M.D.	West Liberty	Do.
Muhlenberg	Roy M. Orsburn, M.D.	Greenville	Do.
Nicholas	H. Tod Smiser, M.D.	Carlisle	Do.
Ohio	A. D. Park, M.D.	Hartford	Do.
Owsley	Don E. Wilder, M.D.	Booneville	Do.
Perry	D. D. Carr, M.D., M.P.H.	Hazard	Do.
Pike	J. J. Gerkins, M.D.	Pikeville	Do.
Powell	M. H. Skaggs, M.D.	Stanton	Do.
Pulaski	F. C. Campbell	Somerset	Do.
Robertson	L. T. Lanham, M.D.	Mt. Olivet	Do.
Rockcastle	Walker Owens, M.D.	Mt. Vernon	Do.
Rowan	T. A. E. Evans, M.D.	Morehead	Do.
Scott	F. W. Caudill, M.D.	Georgetown	Do.
Todd	Thos. J. LaMotte, M.D.	Elkton	Do.
Trigg	H. M. Batson, M.D.	Cadiz	Do.
Trimble	C. B. Walker, M.D.	Bedford	Do.
Union	J. F. Lynn, M.D.	Morganfield	Do.
Warren	G. M. Wells, M.D.	Bowling Green	Do.
Wayne	Mack Roberts, M.D.	Monticello	Do.
Webster	C. M. Smith, M.D.	Dixon	Do.
Whitley	L. A. Crosby, M.D.	Williamsburg	Do.
Wolfe	Taylor Center, M.D.	Campton	Do.
Louisiana: [1]			
Assumption	P. M. Payne, M.D.	Napoleonville	Director.
Avoyelles	T. B. Wilson, M.D.	Marksville	Parish health officer.
Caddo	Branch J. Aymond, M.D.	Shreveport	Director.
Caldwell	Thos. Burk, M.D.	Columbia	Do.
Catahoula	W. C. Coney, M.D.	Harrisonburg	Do.
Claiborne	H. R. Marlatt, M.D.	Homer	Parish health officer.
Concordia	John Schreiber, M.D.	Vidalia	Director.
De Soto	R. A. Tharp, M.D.	Mansfield	Parish health officer.
East Carroll	G. D. Williams, M.D.	Lake Providence	Director.
Franklin	R. E. Applewhite, M.D.	Winnsboro	Do.
Iberia	B. L. Stinson, M.D.	New Iberia	Parish health officer.
Iberville	J. C. Eby, M.D., Phar.D.	Plaquemine	Director.
Lafayette	R. S. Hernandez, M.D.	Lafayette	Parish health officer.
Lafourche	H. S. Smith, M.D.	Thibodaux	Do.
La Salle	H. H. Bishop, M.D.	Jena	Director.
Lincoln	R. H. Allen, M.D.	Ruston	Do.
Madison	E. S. Freeman, M.D.	Tallulah	Do.
Morehouse	N. P. Liles, M.D.	Bastrop	Do.
Natchitoches	W. W. Knipmeyer, M.D., C.P.H.	Natchitoches	Parish health officer.
Ouachita	John W. Williams, M.D., C.P.H.	Monroe	Do.
Pointe Coupee	F. F. Rougon, Ph.G., M.D.	New Roads	Do.
Rapides	Edmond Klamke, M.D., M.P.H.	Alexandria	Do.
Richland	R. O. C. Green, M.D.	Rayville	Director.
St. Landry	J. A. Coleman, M.D.	Opelousas	Do.
St. Martin	P. H. Fleming, M.D.	St. Martinville	Do.
St. Mary	L. R. Craig, M.D.	Franklin	Do.

[1] Parishes.

State and county	Name of health officer	Post-office address	Official title
Louisiana—Continued			
Tensas	F. A. Thomas, M.D.	St. Joseph	Director.
Terrebonne	M. F. Houston, M.D.	Houma	Do.
Washington	F. A. Williams, M.D.	Franklinton	Do.
Webster	W. C. Summer, M.D.	Minden	Parish health officer.
West Carroll	W. L. Stone, M.D.	Oak Grove	Director.
Maine: [3]			
Bar Harbor	A. A. Robertson, C.P.H.	Bar Harbor	Health officer.
Rumford	Thomas S. Burr, M.D.	Rumford	Do.
Sanford	W. H. Kelly, M.D.	Sanford	Do.
Cooperative Health Union.	B. L. Arms, M.D.	Farmington	Do.
Avon.			
Chesterville.			
Eustis.			
Livermore.			
Phillips.			
Rangeley.			
Strong.			
Temple.			
Weld.			
Wilton.			
Motbov Union	Howard L. Jackson, M.D.	Old Town	Do.
Bradley.			
Milford.			
Old Town.			
Orono.			
Veazie.			
Maryland:			
Allegany	J. P. Franklin, M.D.	Cumberland	Deputy State health officer.
Anne Arundel	John H. Janney, Jr., M.D.	Annapolis	Do.
Baltimore	J. S. Bowen, M.D.	Towson	Do.
Calvert	I. N. King, M.D.	Prince Frederick	Do.
Carroll	W. C. Stone, M.D.	Westminster	Do.
Cecil	C. A. Kane, M.D.	Elkton	Do.
Charles	D. St. Clair Campbell, M.D.	La Plata	Do.
Dorchester	E. A. Jones, M.D.	Cambridge	Do.
Frederick	E. C. Kefauver, M.D.	Frederick	Do.
Garrett	George E. Clarke, M.D.	Oakland	Do.
Harford	T. A. Callahan, M.D.	Bel Air	Do.
Howard	Wm. J. French, M.D.	Ellicott City	Do.
Kent	R. G. Beachley, M.D., D.P.H.	Chestertown	Do.
Montgomery	V. L. Ellicott, M.D.	Rockville	Do.
Prince Georges	A. B. Hooton, M.D.	Upper Marlboro	Do.
Queen Annes	James A. McCallum, M.D.	Centreville	Do.
Somerset	Robert H. Johnson, M.D.	Princess Anne	Do.
Talbot	A. L. Oilar, M.D.	Easton	Do.
Washington	W. Ross Cameron, M.D.	Hagerstown	Do.
Wicomico	Seth H. Hurdle, M.D.	Salisbury	Do.
Worcester	Bradford Massey, M.D.	Pocomoke	Do.
Massachusetts:			
Barnstable	Almon P. Goff, M.D.	Hyannis	County health officer.
Nashoba [4]	G. Fletcher Reeves, M.D.	Ayer	Director public health.
Southern Berkshire [4]	Harold W. Stevens, M.D.	Great Barrington	Medical director.
Michigan:			
Allegan	A. B. Mitchell, M.D.	Allegan	County health officer.
Barry	M. R. Kinde, M.D.	Hastings	Do.
Genesee	Leslie A. Lambert, M.D.	Flint	Do.
Isabella	Thomas E. Gibson, M.D.	Mount Pleasant	Do.
Kent	J. D. Brook, M.D.	Grand Rapids	Do.
Midland	Arthur W. Newitt, M.D.	Midland	Do.
Oakland	John D. Monroe, M.D.	Pontiac	Do.
Ottawa	Ralph Ten Have, M.D.	Grand Haven	Do.
Saginaw	Wm. H. Pickett, M.D., C.P.H.	Saginaw	Do.
Wexford	S. C. Moore, M.D.	Cadillac	Do.
District health unit.	Guy R. Post, M.D., C.P.H.	White Cloud	District health officer.
Lake.			
Newaygo.			
Oceana.			
District health unit.	Stanley A. Stealy, M.D.	Grayling	Do.
Crawford.			
Kalkaska.			
Missaukee.			
Roscommon.			
District health unit.	T. H. Johnston, M.D., C.P.H.	West Branch	Do.
Alcona.			
Iosco.			
Ogemaw.			
Oscoda.			

[3] Township or district.
[4] District.

State and county	Name of health officer	Post-office address	Official title
Michigan—Continued			
District health unit. Antrim. Charlevoix. Emmet. Otsego.	Gordon B. Moffatt, M.D.	Charlevoix	District health officer.
District health unit. Alpena. Cheboygan. Montmorency. Presque Isle.	R. B. Howard, M.D., C.P.H.	Rogers City	Do.
Minnesota:			
St. Louis	G. J. Ferreira, M.D.	Duluth	County health officer.
Mississippi:			
Adams	Loren Wallin, M.D.	Natchez	Health officer.
Bolivar	R. D. Dedwylder, M.D.	Cleveland	Do.
Coahoma	V. B. Harrison, M.D.	Clarksdale	Do.
Forrest	B. D. Blackwelder, M.D., C.P.H.	Hattiesburg	Do.
Hancock	C. M. Shipp, M.D.	Bay St. Louis	Do.
Harrison	Daniel J. Williams, M.D.	Gulfport	Do.
Hinds	W. E. Noblin, M.D.	Jackson	Do.
Holmes	C. J. Vaughn, M.D.	Lexington	Do.
Humphreys	W. W. Scott, M.D.	Belzoni	Do.
Jackson	R. G. Lander, M.D.	Pascagoula	Do.
Lamar	J. N. Mason, M.D.	Purvis	Do.
Lauderdale	D. V. Galloway, M.D., M.P.H.	Meridian	Do.
Lee	W. H. Cleveland, M.D.	Tupelo	Do.
Leflore	L. A. Barnett, M.D.	Greenwood	Do.
Lincoln	W. R. May, M.D., C.P.H.	Brookhaven	Do.
Monroe	C. H. Love, M.D.	Aberdeen	Do.
Pearl River	G. E. Godman, M.D.	Poplarville	Do.
Pike	T. Paul Haney, M.D., C.P.H.	McComb	Do.
Sharkey	A. K. Barrier, M.D.	Rolling Fork	Do.
Sunflower	N. C. Knight, M.D.	Indianola	Do.
Union	Irvin B. Trapp, M.D.	New Albany	Do.
Warren	F. Michael Smith, M.D.	Vicksburg	Do.
Washington	A. R. Perry, M.D.	Greenville	Do.
Yazoo	Hugh L. McCalip, M.D., C.P.H.	Yazoo City	Do.
Missouri:			
Boone	R. R. Robinson, M.D.	Columbia	County health officer.
Buchanan	W. S. Hull, M.D.	St. Joseph	Do.
Dunklin	Wheeler Davis, M.D.	Kennett	Do.
Greene	J. W. Williams, M.D.	Springfield	Do.
Jackson	Joseph T. Brennan, M.D.	Independence	Do.
Marion	E. M. Lucke, M.D.	Hannibal	Do.
Miller	L. M. Garner, M.D.	Eldon	Do.
New Madrid	Wm. N. O'Bannon, M.D.	New Madrid	Do.
Pemiscot	Fred L. Ogilvie, M.D.	Caruthersville	Do.
St. Louis	Louis C. Obrock, M.D.	Clayton	Do.
Montana:			
Cascade	F. L. Watkins, M.D.	Great Falls	Do.
Gallatin	A. D. Brewer, M.D.	Bozeman	Do.
Lewis and Clark	Wm. M. Copenhaver, B.M., M.D.	Helena	Do.
Missoula	F. D. Pease, M.D.	Missoula	Do.
New Mexico:			
Bernalillo	J. R. Scott, M.D.	Albuquerque	Do.
Dona Ana	C. W. Gerber, M.D.	Las Cruces	Do.
Eddy	O. E. Puckett, M. D.	Carlsbad	Do.
Santa Fe	E. F. McIntyre, M.D.	Santa Fe	Do.
Union	C. H. Douthirt, M.D.	Clayton	Do.
Valencia	R. H. Wilson, M.D.	Los Lunas	Do.
New York:			
Cattaraugus	R. M. Atwater, M.D., P.H. Dr.	Olean	County health commissioner.
Cortland	Daniel R. Reilly, M.D.	Cortland	Do.
Suffolk	Arthur T. Davis, M.D.	Riverhead	Do.
Westchester	Matthias Nicoll, Jr., M.D.	White Plains	Do.
North Carolina:			
Beaufort	D. E. Ford, M.D.	Washington	Do.
Bladen	R. S. Cromartie, M.D.	Elizabethtown	Do.
Buncombe	R. E. Fox, M.D.	Asheville	Do.
Cabarrus	D. G. Caldwell, M.D.	Concord	Do.
Columbus	Floyd Johnson, M.D.	Whiteville	Do.
Cumberland	L. L. Williams, M.D.	Fayetteville	Do.
Davidson	G. C. Gambrell, M.D.	Lexington	Do.
Durham	J. H. Epperson, Ph.D.	Durham	Do.
Edgecombe	R. E. Broadway, M.D.	Tarboro	Do.
Forsythe	J. R. Hege, M.D.	Winston-Salem	Do.
Franklin	R. F. Yarborough, M.D.	Louisburg	Do.

State and county	Name of health officer	Post-office address	Official title
North Carolina—Con.			
Gaston	R. E. Rhyne, M.D.	Gastonia	County health commissioner.
Granville	J. A. Morris, M.D.	Oxford	Do.
Guilford	R. M. Buie, M.D.	Greensboro	Do.
Halifax	Z. P. Mitchell, M.D.	Weldon	Do.
Lenoir	Z. V. Moseley, M.D.	Kinston	Do.
Mecklenburg	E. H. Hand, M.D.	Charlotte	Do.
Moore	John Symington, M.D.	Carthage	Do.
New Hanover	A. H. Elliot, M.D.	Wilmington	Do.
Northampton	M. H. Seawell, M.D.	Jackson	Do.
Pitt	R. S. McGeachy, M.D.	Greenville	Do.
Randolph	G. H. Sumner, M.D.	Asheboro	Do.
Richmond	C. N. Sisk, M.D.	Rockingham	Do.
Robeson	E. R. Hardin, M.D.	Lumberton	Do.
Rowan	C. W. Armstrong, M.D.	Salisbury	Do.
Rutherford	J. C. Twitty, M.D.	Rutherfordton	Do.
Sampson	S. Glenn Wilson, M.D.	Clinton	Do.
Surry	T. C. Britt, M.D.	Mount Airy	Do.
Vance	C. H. White, M.D.	Henderson	Do.
Wake	A. C. Bulla, M.D.	Raleigh	Do.
Wayne	F. M. Register, M.D.	Goldsboro	Do.
Wilkes	A. J. Eller, M.D.	Wilkesboro	Do.
Wilson	W. H. Anderson, M.D.	Wilson	Do.
Ohio:			
Allen	J. J. Sutter, M.D.	Lima	Health commissioner.
Ashtabula	W. S. Weiss, M.D.	Jefferson	Do.
Belmont	F. R. Dew, M.D.	St. Clairsville	Do.
Butler	C. J. Baldridge, M.D.	Hamilton	Do.
Clinton	W. K. Ruble, M.D.	Wilmington	Do.
Columbiana	T. T. Church, M.D.	Lisbon	Do.
Coshocton	D. M. Criswell, M.D.	Coshocton	Do.
Crawford	G. T. Wasson, M.D.	Bucyrus	Do.
Cuyahoga	Robert Lockhart, M.D.	Cleveland	Do.
Darke	W. D. Bishop, M.D.	Greenville	Do.
Delaware	B. B. Barber, M.D.	Delaware	Do.
Erie	F. M. Houghtaling, M.D.	Sandusky	Do.
Fayette	J. F. Wilson, M.D.	Washington C.H.	Do.
Franklin	B. E. Neiswander, M.D.	Columbus	Do.
Hamilton	E. H. Schoenling, M.D.	Cincinnati	Do.
Hancock	S. F. Whisler, M.D.	Findlay	Do.
Hocking	W. B. Lacock, M.D.	Logan	Do.
Huron	B. C. Pilkey, M.D.	Norwalk	Do.
Jefferson	J. P. Young, M.D.	Steubenville	Do.
Lorain	H. R. O'Brien, M.D.	Oberlin	Do.
Lucas	F. F. DeVere, M.D.	Toledo	Do.
Mahoning	G. Y. Davis, M.D.	Youngstown	Do.
Marion	N. Stritt, M.D.	Marion	Do.
Medina	T. W. Mahoney, M.D.	Medina	Do.
Meigs	W. S. Ellis, M.D.	Pomeroy	Do.
Mercer	F. E. Ayers, M.D.	Celina	Do.
Miami	E. R. Hiatt, M.D.	Troy	Do.
Montgomery	H. H. Pansing, M.D.	Dayton	Do.
Morrow	R. L. Pierce, M.D.	Mt. Gilead	Do.
Perry	F. J. Crosbie, M.D.	New Lexington	Do.
Pickaway	C. C. Beale, M.D.	Circleville	Do.
Preble	J. I. Nisbet, M.D.	Eaton	Do.
Richland	M. C. Hanson, M.D.	Mansfield	Do.
Ross	R. E. Bower, M.D.	Chillicothe	Do.
Scioto	G. W. Fishbaugh, M.D.	Portsmouth	Do.
Seneca	J. J. Heaton, M.D.	Tiffin	Do.
Shelby	A. B. Lippert, M.D.	Sidney	Do.
Stark	O. C. Ricksecker, M.D.	Canton	Do.
Summit	R. H. Markwith, M.D.	Akron	Do.
Trumbull	L. A. Connell, M.D.	Warren	Do.
Tuscarawas	J. Blickensderfer, M.D.	New Philadelphia	Do.
Washington	A. G. Sturgiss, M.D.	Marietta	Do.
Wayne	W. G. Rhoten, M.D.	Wooster	Do.
Wood	H. J. Powell, M.D.	Bowling Green	Do.
Oregon:			
Clackamas	A. H. Johnston, M.D.	Oregon City	County health officer.
Douglas	B. R. Shoemaker, M.D.	Roseburg	Do.
Jackson	C. I. Drummond, M.D.	Medford	Do.
Klamath	G. S. Newsom, M.D.	Klamath Falls	Do.
Lane	R. C. Romig, M.D.	Eugene	Do.
Marion	Vernon A. Douglas, M.D.	Salem	Do.
Pennsylvania:			
Allegheny	Eugene Conti, M.D.	Pittsburgh	County medical director.
Bucks	Charles W. Many, M.D.	Doylestown	Do.
Luzerne	W. F. Davison, M.D.	Wilkes-Barre	Do.
South Carolina:			
Aiken	J. T. Hair, M.D.	Aiken	Health officer.
Anderson	E. E. Epting, M.D.	Anderson	Do.
Beaufort	H. F. Wilson, M.D.	Beaufort	Do.
Berkeley	W. K. Fishburne, M.D.	Moncks Corner	Do.
Charleston	Leon Banov, M.D.	Charleston	Do.

State and county	Name of health officer	Post-office address	Official title
South Carolina—Con.			
Cherokee	E. P. White, M.D.	Gaffney	Health officer.
Darlington	W. A. Carrigan, M.D.	Darlington	Do.
Dillon	G. E. McDaniel, M.D.	Dillon	Do.
Dorchester	G. R. O'Daniel, M.D.	St. George	Do.
Fairfield	J. L. Bryson, M.D.	Winnsboro	Do.
Florence	J. R. Claussen, M.D.	Florence	Do.
Georgetown	P. E. Assey, M.D.	Georgetown	Do.
Greenville	Baylis Earle, M.D.	Greenville	Do.
Greenwood	J. E. Brodie, M.D.	Greenwood	Do.
Horry	R. W. Ball, M.D.	Conway	Do.
Kershaw	A. W. Humphries, M.D.	Camden	Do.
Lexington		Lexington	Do.
Marion	B. M. Montgomery, M.D.	Marion	Do.
Newberry	H. B. Senn, M.D.	Newberry	Do.
Oconee	T. G. Hall, M.D.	Walhalla	Do.
Orangeburg	G. C. Bolin, M.D.	Orangeburg	Do.
Pickens	W. B. Furman, M.D.	Easley	Do.
Richland	J. B. Setzler, M.D.	Columbia	Do.
Spartanburg	J. M. Beeler, M.D.	Spartanburg	Do.
South Dakota:			
Pennington	F. J. Austin, M.D.	Rapid City	Director.
Tennessee:			
Bledsoe	H. M. Roberson, M.D.	Pikeville	Health officer.
Bradley	W. C. Sanford, M.D.	Cleveland	Director.
Carter	O. F. Agee, M.D.	Elizabethton	Do.
Davidson	J. J. Lentz, M.D.	Nashville	Health officer.
Dyer	E. E. Carrier, M.D.	Dyersburg	Do.
Fentress	J. B. White, M.D.	Jamestown	Director.
Gibson	F. L. Roberts, M.D.	Trenton	Health officer.
Giles	Crit Pharris, M.D.	Pulaski	Director.
Greene	R. S. Cowles, M.D.	Greeneville	Health officer.
Hamilton	J. C. Eldridge, M.D.	Chattanooga	Director.
Hardeman	R. L. Cobb, M.D.	Bolivar	Do.
Humphreys	J. W. Frost, M.D.	Waverly	Do.
Knox	A. G. Hufstedler, M.D.	Knoxville	Do.
Lake	J. P. Moon, M.D.	Tiptonville	Do.
Lauderdale	R. B. Griffin, M.D.	Ripley	County health officer.
Lewis	S. P. Simpson, M.D.	Hohenwald	Do.
Lincoln	D. D. Howser, M.D.	Fayetteville	Director.
Maury	H. C. Busby, M.D.	Columbia	Do.
Monroe	P. H. Edwards, Jr., M.D.	Madisonville	Do.
Montgomery	F. J. Malone, M.D.	Clarksville	County health officer.
Obion	W. B. Harrison, M.D.	Union City	Do.
Roane	J. C. Fly, M.D.	Kingston	Do.
Rutherford	J. B. Black, M.D.	Murfreesboro	Do.
Sevier	C. P. Wilson, M.D.	Sevierville	Director.
Shelby	W. P. Moore, M.D.	Memphis	Health officer.
Sullivan	F. L. Moore, M.D.	Blountville	Do.
Sumner	G. M. Morris, M.D.	Gallatin	Director.
Tipton	A. J. Butler, M.D.	Covington	Do.
Unicoi	J. L. Cochran, M.D.	Erwin	Do.
Washington	W. L. Poole, M.D., M.P.H.	Jonesboro	Do.
Weakley	M. D. Ingram, M.D.	Dresden	County health officer.
Williamson	R. H. Hutcheson, M.D.	Franklin	Acting health officer.
Wilson	W. D. Cagle, M.D.	Lebanon	County health officer.
District no. 1. Overton. Pickett.	E. W. Clark, M.D.	Livingston	Director.
District no. 2. Clay. Jackson.	F. B. Clark, M.D.	Gainesboro	Do.
District no. 3. Meigs. Rhea.	J. Y. O'Daniel, M.D.	Dayton	Do.
District no. 4. Grundy. Sequatchie.	U. B. Bowden, M.D.	Pelham	Do.
Texas:			
Cameron	W. E. Spivey, M.D.	San Benito	Do.
Dallas	H. E. Duncan, M.D.	Dallas	Do.
Gregg	G. S. Atkinson, M.D.	Longview	Do.
Hidalgo	D. R. Handley, M.D.	Edinburg	County health officer.
McLennan	W. F. Curran, M.D.	Waco	Do.
Nolan	E. W. Prothro, M.D.	Sweetwater	Director.
Potter	B. M. Primer, M.D., M.P.H.	Amarillo	Do.
Smith	B. T. Bryant, M.D.	Tyler	County health officer.
Starr	C. Solis, M.D.	Rio Grande City	Do.
Tarrant	Burke Brewster, M.D.	Fort Worth	Do.

State and county	Name of health officer	Post-office address	Official title
Utah:			
Davis	Sumner Gleason, M.D., D.D.S.	Kaysville	County health officer.
Utah	Palmer Romaine Bowdish, M.D., A.B.	Provo	Do.
Virginia:			
Accomac	Claude J. Bradshaw, M.D.	Accomac	Health officer.
Albemarle	Edward L. McQuade, M.D., C.M.	Charlottesville	Do.
Arlington	P. M. Chichester, M.D.	Clarendon	Do.
Augusta	Harry M. Wallace, M.D.	Staunton	Do.
Brunswick-Greensville.[5]	Thomas H. Valentine, M.D.	Lawrenceville	Do.
Fairfax	Adrian L. Carson, Jr., M.D.	Fairfax	Do.
Halifax	Shockley D. Gardner, M.D.	South Boston	Do.
Henrico	Allen L. McLean, M.D., C.M.	Richmond	Do.
Isle of Wight-Nansemond.[5]	Challis H. Dawson, M.D.	Suffolk	Do.
Norfolk-Princess Anne.[5]	Josiah Leake, M.D.	Portsmouth	Do.
Pittsylvania	William H. Walcott, M.D.	Chatham	Do.
Rockbridge	Robert P. Cooke, M.D.	Lexington	Do.
Southampton	Peter P. Causey, M.D.	Courtland	Do.
Southside Health District (9-county project). Amelia. Appomattox. Buckingham. Charlotte. Cumberland. Lunenburg. Nottoway. Powhatan. Prince Edward.	W. A. Brumfield, M.D.	Farmville	District health officer.
Washington:			
Chelan	Paul L. West, M.D.	Wenatchee	Health officer.
Clarke	Geo. H. T. Sparling, M.D.	Vancouver	Do.
King	C. L. Dixon, M.D.	Seattle	Do.
Snohomish	H. L. Eldridge, M.D.	Everett	Do.
Spokane	W. O. Wisner, M.D.	Spokane	Do.
Walla Walla	J. E. Vanderpool, M.D.	Walla Walla	Do.
Whitman	R. J. Skaife, M.D.	Colfax	Do.
Yakima	Lloyd Moffitt, M.D.	Yakima	Do.
West Virginia:			
Berkeley	Edwin Cameron, M.D.	Martinsburg	County Health Officer.
Boone	C. E. Lewis, M.D.	Madison	Do.
Fayette	H. H. Puckett, M.D.	Fayetteville	Do.
Hancock	T. E. Cato, M.D.	New Cumberland	Do.
Harrison	A. J. Kemper, M.D.	Clarksburg	Do.
Kanawha	John Thames, M.D.	Charleston	Do.
Logan	V. A. Deason, M.D.	Logan	Do.
Marion	F. F. Sowers, M.D.	Fairmont	Do.
Marshall	W. G. C. Hill, M.D.	Moundsville	Do.
Monongalia	R. C. Farrier, M.D.	Morgantown	Do.
Ohio	W. H. McLain, M.D.	Wheeling	Do.
Preston	E. R. Davies, M.D.	Kingwood	Do.
Raleigh	W. W. Hume, M.D.	Beckley	Do.
Wood	A. D. Knott, M.D.	Parkersburg	Do.

[5] Bicounty project.

COURT DECISION RELATING TO PUBLIC HEALTH

Order concerning importation of cattle to safeguard against Bang's disease upheld.—(United States Supreme Court; *Mintz et al.* v. *Baldwin*, 53 S. Ct. 611; decided May 8, 1933.) The commissioner of agriculture and markets of the State of New York, acting in pursuance of statutory authority, adopted an order which was designed to guard against Bang's disease, bovine infectious abortion. This order required that all cattle over 6 months of age imported for dairy or breeding purposes should come directly from herds certified to be

free from Bang's disease. The plaintiffs, who were engaged in the cattle-raising business in Wisconsin, shipped 20 head of cattle from that State for delivery to a consignee in New York State. The animals so shipped were accompanied by a certificate which was sufficient as to them, but there was nothing to show the freedom from Bang's disease of the herd or herds from which they came. Because of this, the New York State commissioner refused to permit the cattle to be delivered, and the plaintiffs were compelled to take them out of the State. Suit was brought against the commissioner by the plaintiffs for a temporary and perpetual injunction to restrain the enforcement of the order. The claim advanced by the plaintiffs was that the commissioner's order was repugnant to the commerce clause of the Federal Constitution because in conflict with Federal statutes relating to interstate transportation of livestock. The lower court denied a temporary injunction and dismissed the plaintiffs' bill. On appeal by the plaintiffs to the United States Supreme Court, that Court said that the order was an inspection measure and that it could not be maintained that the order so unnecessarily burdened interstate transportation as to contravene the commerce clause. The Court then stated:

> * * * Unless limited by the exercise of Federal authority under the commerce clause, the State has power to make and enforce the order. The purpose of Congress to supersede or exclude State action against the ravages of the disease is not lightly to be inferred. The intention so to do must definitely and clearly appear. * * *

Regarding the plaintiffs' contention that the order conflicted with the Federal cattle contagious diseases act of March 3, 1905, relating to quarantine by the Secretary of Agriculture and the transportation of cattle from quarantined districts, the Supreme Court held this contention to be groundless, saying:

> * * * That act applies only to shipments from quarantined districts that it authorizes the secretary to establish. Plaintiffs' shipments are not made from such a district.

Proceeding, the court said that an examination of the Federal cattle contagious diseases act of February 2, 1903, was necessary. This act, intended to enable the Secretary of Agriculture to prevent the spread of disease among cattle and other livestock, authorized and directed him from time to time to establish such regulations concerning interstate transportation from any place "where he may have reason to believe such diseases may exist * * *." It also provided that "Whenever any inspector or assistant inspector of the Bureau of Animal Industry shall issue a certificate showing that such officer had inspected any cattle * * * which were about to be shipped * * * from such locality * * * and had found them free from * * * communicable disease, such animals so inspected

and certified may be shipped, driven, or transported from such place" in interstate commerce "without further inspection or the exaction of fees of any kind except such as may at any time be ordered or exacted by the Secretary of Agriculture. * * *" In November 1932, by letter to the defendant commissioner, the Federal Department of Agriculture had declared that it had issued no quarantine or regulations pertaining to Bang's disease and that its policy for the present was to leave the control with the various States. Relative to the application of the 1903 act to the instant case, the Supreme Court said:

> Plaintiffs' cattle were not inspected by, and no certificate was issued under, Federal authority. Unless the act itself operates to prevent the enforcement of the order, the suit was rightly dismissed. The express exclusion of State inspection extends only to cases where Federal inspection has been made and certificate issued. The clause cannot be read to extend to other cases. The expression of purpose so to limit the exertion of State power strongly suggests that Congress intended not otherwise to trammel the enforcement of State quarantine measures. [Case cited.] Much weight is to be given to the practical interpretation of the act by the Federal department through its acquiescence in the enforcement of State measures to suppress Bang's disease. This case is governed by the principle on which rests the decision in *Asbell* v. *Kansas* (209 U.S. 251, 28 S. Ct. 485, 52 L. Ed. 778, 14 Ann. Cas. 1101). Defendant's order does not conflict with the act of 1903.

The decree of the lower court was affirmed.

DEATHS DURING WEEK ENDED JUNE 24, 1933

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce

	Week ended June 24, 1933	Corresponding week 1932
Data from 85 large cities of the United States:		
Total deaths	7,403	7,097
Deaths per 1,000 population, annual basis	10.4	10.1
Deaths under 1 year of age	531	590
Deaths under 1 year of age per 1,000 estimated live births [1]	44	48
Deaths per 1,000 population, annual basis, first 25 weeks of year	11.6	12.0
Data from industrial insurance companies:		
Policies in force	67,755,624	72,457,832
Number of death claims	13,121	12,405
Death claims per 1,000 policies in force, annual rate	10.1	9.0
Death claims per 1,000 policies, first 25 weeks of year, annual rate	10.5	10.2

[1] 81 cities.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended July 1, 1933, and July 2, 1932

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 1, 1933, and July 2, 1932

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932
New England States:								
Maine	3	1	5	------	10	58	1	0
New Hampshire	------	1	------	------	9	11	0	0
Vermont	------	------	------	------	40	116	0	0
Massachusetts	11	45	------	1	440	563	0	3
Rhode Island	1	6	1	------	------	12	0	0
Connecticut	4	4	1	2	99	133	0	0
Middle Atlantic States:								
New York	43	57	[1]3	[1]3	792	1,434	3	4
New Jersey	25	20	3	4	404	409	0	1
Pennsylvania	36	54	------	------	575	656	2	1
East North Central States:								
Ohio	27	37	32	5	104	818	1	3
Indiana [2]	13	10	12	5	69	29	2	2
Illinois	12	33	18	49	236	293	8	3
Michigan	21	20	------	2	199	1,498	2	4
Wisconsin	5	10	8	11	140	630	0	2
West North Central States:								
Minnesota	7	8	1	1	117	14	0	0
Iowa	6	4	------	------	25	3	0	1
Missouri	29	21	4	------	142	16	0	0
North Dakota	1	------	------	------	10	47	0	0
South Dakota	2	------	------	------	4	3	0	0
Nebraska	6	5	------	------	68	4	3	0
Kansas	1	5	------	1	88	100	1	1
South Atlantic States:								
Delaware	2	1	------	------	8	1	0	0
Maryland [2] [4]	1	6	2	3	15	21	1	0
District of Columbia	3	8	------	------	43	6	0	0
Virginia [2]	6	7	------	------	97	38	2	0
West Virginia [2]	4	7	------	4	11	111	0	1
North Carolina [2]	4	12	1	1	248	247	2	0
South Carolina [2]	8	2	35	121	104	60	0	0
Georgia [2]	14	5	------	9	119	5	0	2
Florida	2	2	1	------	6	6	0	0
East South Central States:								
Kentucky	1	6	------	------	10	32	1	0
Tennessee	7	3	14	5	89	------	1	0
Alabama [2]	6	10	4	3	27	------	0	1
Mississippi	3	4	------	------	------	------	0	

See foot notes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 1, 1933, and July 2, 1932—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932
West South Central States:								
Arkansas		6		5	75	1	0	0
Louisiana [1]	10	10	8	6	11	7	1	1
Oklahoma [4]	9	7	9	4	14	28	0	1
Texas [1]	50	21	59	19	253	16	4	0
Mountain States:								
Montana [2]				3	38	38	0	0
Idaho [2]		3				3	0	0
Wyoming [2]	1				4	35	0	0
Colorado	6	8			11	57	0	0
New Mexico	3	3	1		4	3	0	0
Arizona					36	2	0	0
Utah [4]					43	4	0	0
Pacific States:								
Washington	4	4			67	86	1	1
Oregon [2]		3	10	5	15	58	1	0
California	42	20	12	3	534	126	2	0
Total	448	499	244	275	5,453	7,838	39	32

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932
New England States:								
Maine	0	1	3	15	0	0	7	2
New Hampshire	0	0	11	10	0	0	1	0
Vermont	0	0	1	3	0	0	0	0
Massachusetts	5	2	168	210	0	0	2	1
Rhode Island	1	0	13	21	0	0	0	0
Connecticut	2	1	33	34	0	0	1	1
Middle Atlantic States:								
New York	7	4	232	376	0	1	17	10
New Jersey	0	0	81	126	0	0	4	5
Pennsylvania	3	0	288	285	0	0	21	15
East North Central States:								
Ohio	3	1	262	174	4	6	12	17
Indiana [1]	1	1	21	34	2	5	22	7
Illinois	4	4	134	129	0	1	21	20
Michigan	1	0	171	274	5	4	1	11
Wisconsin	1	2	65	23	0	0	1	3
West North Central States:								
Minnesota	0	2	23	23	1	0	0	0
Iowa	1	0	4	12	12	9	0	1
Missouri	0	0	23	17	0	6	21	4
North Dakota	0	5	2	14	2	3	0	3
South Dakota	0	0	8	2	0	3	0	3
Nebraska	0	0	14	11	4	2	0	0
Kansas	0	0	17	9	1	6	4	6
South Atlantic States:								
Delaware	0	0	2	7	0	0	0	0
Maryland [2 3 4]	1	0	27	31	0	0	19	10
District of Columbia	0	0	7	5	0	0	0	1
Virginia [2]	0	0	22	6	0	0	29	35
West Virginia [2]	3	0	11	11	0	0	18	25
North Carolina [2]	0	3	22	31	0	0	43	42
South Carolina [2]	0	2	1	3	1	0	37	47
Georgia [2]	0	0		2	0	6	44	54
Florida	0	0	2	4	0	1	4	5
East South Central States:								
Kentucky	0	1	10	9	0	2	32	72
Tennessee	2	0	7	7	0	7	58	91
Alabama [2]	0	0	9	11	0	2	30	20
Mississippi	0	0	4	3	1	1	25	20

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended July 1, 1933, and July 2, 1932—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932	Week ended July 1, 1933	Week ended July 2, 1932
West South Central States:								
Arkansas	0	0	1	1	0	1	17	19
Louisiana [3]	0	1	9	5	0	0	32	27
Oklahoma [4]	1	0	8	12	0	0	28	17
Texas [3]	1	4	41	24	32	3	54	25
Mountain States:								
Montana [2]	0	0	18	3	0	1	7	3
Idaho [2]	0	0	1	2	3	0	1	3
Wyoming [2]	0	0	3	5	0	0	1	0
Colorado	0	0	20	7	21	0	0	5
New Mexico	0	0	5	6	0	0	1	5
Arizona	0	0	3	3	0	0	3	2
Utah [4]	0	0	5	----	0	0	0	0
Pacific States:								
Washington	0	4	3	4	6	13	2	4
Oregon [2]	0	0	14	19	20	3	1	2
California	4	4	76	56	15	9	3	8
Total	41	42	1,905	2,079	130	89	624	651

[1] New York City only.
[2] Rocky Mountain spotted fever, week ended July 1, 1933, 18 cases as follows: Indiana, 1; Maryland, 4; Montana, 3; Idaho, 3; Wyoming, 5; Oregon, 2.
[3] Typhus fever, week ended July 1, 1933, 31 cases as follows: Maryland, 1; Virginia, 1; West Virginia, 1; North Carolina, 2; South Carolina, 1; Georgia, 1; Alabama, 13; Louisiana, 1; Texas, 10.
[4] Week ended Friday.
[5] Figures for 1933 are exclusive of Oklahoma City and Tulsa, and for 1932 are exclusive of Tulsa only.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May 1933										
Arkansas	1	19	34	75	1,276	85	0	11	12	21
Delaware	----	4	1	----	45	----	----	59	0	3
Nevada	2	3	6	----	1	----	0	15	0	0
Oklahoma [1]	8	21	49	59	623	2	1	36	26	16
Puerto Rico	----	35	119	2,403	252	11	0	----	0	66
Texas	7	193	330	616	----	51	5	201	----	73
Virginia	5	39	99	9	1,187	17	1	139	2	31
Washington	6	27	42	----	354	----	4	222	21	7

[1] Exclusive of Oklahoma City and Tulsa.

May 1933

	Cases
Anthrax:	
Delaware	1
Chicken pox:	
Arkansas	141
Delaware	29
Nevada	9
Oklahoma [1]	72
Puerto Rico	126
Virginia	384
Washington	747
Dengue:	
Oklahoma [1]	1
Dysentery:	
Oklahoma [1]	4
Puerto Rico	310
Dysentery and diarrhea:	
Virginia	271
German measles:	
Delaware	1
Washington	29
Filariasis:	
Puerto Rico	6
Impetigo contagiosa:	
Washington	4
Leprosy:	
Puerto Rico	1
Lethargic encephalitis:	
Texas	1
Virginia	2
Washington	1

	Cases
Mumps:	
Arkansas	46
Delaware	1
Oklahoma [1]	38
Puerto Rico	68
Virginia	63
Washington	347
Ophthalmia neonatorum:	
Oklahoma [1]	1
Puerto Rico	5
Virginia	1
Paratyphoid fever:	
Arkansas	3
Puerto Rico	4
Texas	5
Virginia	2
Puerperal septicemia:	
Puerto Rico	11
Washington	1
Rabies in animals:	
Washington	21
Rocky Mountain spotted fever:	
Nevada	5
Virginia	2
Scabies:	
Oklahoma [1]	6
Septic sore throat:	
Oklahoma [1]	15
Virginia	5
Washington	1

	Cases
Tetanus:	
Puerto Rico	23
Virginia	1
Tetanus, infantile:	
Puerto Rico	22
Trachoma:	
Arkansas	1
Oklahoma [1]	4
Puerto Rico	6
Tularaemia:	
Arkansas	5
Oklahoma [1]	1
Virginia	1
Typhus fever:	
Delaware	1
Undulant fever:	
Arkansas	1
Virginia	1
Washington	5
Vincent's angina:	
Oklahoma [1]	2
Whooping cough:	
Arkansas	36
Delaware	8
Nevada	1
Oklahoma [1]	41
Puerto Rico	184
Virginia	210
Washington	49

[1] Exclusive of Oklahoma City and Tulsa.

WEEKLY REPORTS FROM CITIES

City reports for week ended June 24, 1933

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0		0	0	0	1	0	1	1	2	14
New Hampshire:											
Concord	0		0	0	0	0	0	1	0	0	7
Nashua	0		0	0	0	0	0	0	0	0	
Vermont:											
Barre	0		0	2	0	0	0	0	0	1	3
Burlington	0		0	0	0	0	0	0	0	4	5
Massachusetts:											
Boston	4		0	192	11	52	0	13	0	60	163
Fall River	0		0	3	0	5	0	1	0	8	25
Springfield	0		0	1	0	4	0	0	0	7	30
Worcester	1		0	73	4	13	0	2	0	4	46
Rhode Island:											
Pawtucket	0		0	2	0	0	0	0	0	4	16
Providence	3		0	4	2	8	0	1	0	35	50
Connecticut:											
Bridgeport	0		0	15	1	13	0	1	0	1	29
Hartford	0		0	2	1	10	0	0	0	2	30
New Haven	0		0	4	0	3	0	1	0	11	33
New York:											
Buffalo	6		0	72	13	27	0	9	0	35	122
New York	30	6	3	485	97	79	0	92	12	125	1,319
Rochester	1		0	0	0	18	0	0	0	7	71
Syracuse	0		0	0	3	5	0	2	0	9	34
New Jersey:											
Camden	2		0	5	1	11	0	0	0	0	33
Newark	1	2	0	48	6	9	0	5	1	37	87
Trenton	0		1	27	4	4	0	5	0	5	49
Pennsylvania:											
Philadelphia	0	1	1	279	12	55	0	22	3	5	401
Pittsburgh	4		0	3	8	37	0	7	0	71	121
Reading	0		0	7	0	2	0	0	0	6	22
Scranton	0			0		4	0		1	2	
Ohio:											
Cincinnati	3		0	11	4	22	0	6	0	8	125
Cleveland	9	8	1	5	11	46	0	13	2	51	162
Columbus	0		0	2	5	19	0	4	0	0	76
Toledo	2		0	28	1	65	0	3	0	33	58

City reports for week ended June 24, 1933—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Indiana:											
Fort Wayne	3		0	0	1	3	0	2	0	0	42
Indianapolis	0		0	40	5	1	0	2	0	14	
South Bend	0		0	1	1	1	0	1	0	0	19
Terre Haute	0		0	12	0	3	0	0	0	0	19
Illinois:											
Chicago	2		0	223	35	132	0	51	1	32	649
Springfield	0		0	1	2	1	0	1	0	5	27
Michigan:											
Detroit	14		2	97	7	36	0	25	0	117	223
Flint	1		0	1	2	9	0	2	0	5	23
Grand Rapids	0		0	0	0	7	0	1	0	7	24
Wisconsin:											
Kenosha	0		0	0	0	2	0	0	0	15	3
Madison	1			13		0	0		0	10	
Milwaukee	0		0	2	2	21	0	8	2	91	101
Racine	0		0	0	0	9	0	0	0	27	13
Superior	0		0	0	0	0	0	0	0	8	5
Minnesota:											
Duluth	0		0	22	0	0	0	1	0	22	19
Minneapolis	1		0	2	2	9	0	1	0	10	110
St. Paul	0		0	16	3	15	0	5	1	72	66
Iowa:											
Des Moines	0			1		1	1		0	2	28
Sioux City	1			0		0	0		0	4	
Waterloo	0			0		0	0		0	0	
Missouri:											
Kansas City	0		0	3	6	7	0	6	0	8	101
St. Joseph	1		0	3	1	0	0	1	0	0	12
St. Louis											
North Dakota:											
Fargo	0		0	1	0	1	0	0	0	0	4
Grand Forks	0		0	0	0	0	0	0	0	2	
South Dakota:											
Aberdeen	0			1		0	0		1	0	
Nebraska:											
Omaha	1		0	64	1	1	2	0	0	7	59
Kansas:											
Topeka	0		0	7	0	3	0	0	0	6	12
Wichita	0		0	3	2	0	0	0	0	5	16
Delaware:											
Wilmington	0		0	3	0	0	0	0	0	8	23
Maryland:											
Baltimore	1		0	2	13	24	0	20	0	53	186
Cumberland	0		0	2	0	2	0	0	0	0	11
Frederick	0		0	0	0	0	0	0	0	0	1
District of Col.:											
Washington	1		0	16	8	7	0	18	1	12	171
Virginia:											
Lynchburg	0		0	20	0	1	0	0	2	18	13
Norfolk	0		0	0	1	3	0	2	0	6	27
Richmond	0		0	3	3	2	0	6	0	4	57
Roanoke	0		0	1	1	2	0	0	0	1	20
West Virginia:											
Charleston	0		0	0	0	0	0	1	3	0	11
Huntington	0			0		0	0		0	1	
Wheeling	0		0	2	1	1	0	1	0	15	18
North Carolina:											
Raleigh	0		0	0	0	0	0	2	1	0	20
Wilmington	0		0	4	0	0	0	1	1	0	14
Winston-Salem	0		0	0	0	3	0	0	0	1	13
South Carolina:											
Charleston	0	4	0	0	0	0	0	2	4	8	20
Columbia	0		0	0	2	0	0	0	0	0	14
Greenville	0		0	0	1	0	0	1	0	0	7
Georgia:											
Atlanta	5	10	0	6	7	0	0	1	8	38	73
Brunswick	0		0	0	0	0	0	0	0	0	3
Savannah	1	7	1	0	1	0	0	0	0	3	30
Florida:											
Miami	0		0	0	0	0	0	3	1	1	31
Tampa	0		0	0	1	0	0	2	0	0	15
Kentucky:											
Ashland	0		0	0	0	0	0	0	0	9	
Lexington	0		0	0	1	0	0	1	0	2	
Louisville	2		0	8	5	4	0	7	0	6	75

City reports for week ended June 24, 1933—Continued

State and city	Diphtheria cases	Influenza cases	Influenza deaths	Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
Tennessee:											
Memphis	0	-------	0	80	7	2	0	5	1	26	97
Nashville	1	-------	1	5	1	1	0	2	1	0	48
Alabama:											
Birmingnam	1	-------	0	0	0	1	0	3	1	0	65
Mobile	1	-------	0	3	1	2	0	3	1	0	23
Montgomery	0	-------	-------	0	-------	1	0	-------	0	0	-------
Arkansas:											
Fort Smith	0	-------	-------	0	-------	0	0	-------	0	1	-------
Little Rock	0	-------	0	10	2	0	0	2	1	0	6
Louisiana:											
New Orleans	2	2	2	7	12	5	0	9	0	13	162
Shreveport	0	-------	0	0	0	2	0	2	1	1	51
Oklahoma:											
Tulsa	0	-------	-------	30	-------	1	4	-------	1	16	-------
Texas:											
Dallas	12	-------	0	6	5	7	0	5	0	0	61
Fort Worth	0	-------	0	0	1	0	0	2	3	3	37
Galveston	2	-------	0	0	2	0	0	1	1	0	28
Houston	5	-------	0	1	3	0	0	6	0	0	-------
San Antonio	0	-------	1	7	2	1	0	9	0	0	74
Montana:											
Billings	0	-------	0	0	0	1	0	0	0	0	5
Great Falls	0	-------	0	0	0	0	0	1	0	8	3
Helena	0	-------	0	0	0	0	0	0	0	0	3
Missoula	0	-------	0	1	0	0	0	0	0	0	0
Idaho:											
Boise	0	-------	0	0	0	0	1	0	0	1	8
Colorado:											
Denver	1	19	0	4	6	2	0	1	0	2	71
Pueblo	0	-------	0	1	0	1	0	0	0	0	-------
New Mexico:											
Albuquerque	0	-------	0	2	1	0	0	1	1	2	9
Utah:											
Salt Lake City	0	-------	0	45	2	6	0	1	0	16	28
Nevada:											
Reno	0	-------	0	0	1	0	0	0	0	0	3
Washington:											
Seattle	0	-------	-------	0	-------	11	0	-------	2	8	-------
Spokane	0	-------	-------	9	-------	0	0	-------	0	0	-------
Tacoma	0	-------	0	0	0	0	0	0	0	2	27
Oregon:											
Portland	0	-------	0	1	2	4	12	1	0	6	63
Salem	0	2	-------	3	-------	0	0	-------	0	-------	-------
California:											
Los Angeles	12	4	1	188	13	62	9	25	0	46	280
Sacramento	1	-------	0	0	1	1	0	2	0	23	29
San Francisco	2	1	2	2	6	1	0	11	0	23	135

State and city	Meningococcus meningitis cases	Meningococcus meningitis deaths	Poliomyelitis cases
Massachusetts:			
Boston	0	2	0
New York:			
New York	5	0	1
New Jersey:			
Newark	1	1	0
Pennsylvania:			
Philadelphia	1	1	0
Pittsburgh	1	0	0
Ohio:			
Cincinnati	0	1	0
Cleveland	1	1	0
Indiana:			
Indianapolis	1	1	0
Illinois:			
Chicago	5	3	1
Michigan:			
Flint	0	1	0
Minnesota:			
Minneapolis	1	0	0
Iowa:			
Sioux City	1	0	0
Louisiana:			
New Orleans	1	1	0
Oklahoma:			
Tulsa	0	0	1
California:			
Sacramento	1	0	0

Lethargic encephalitis.—Cases: Washington, D.C., 1.
Pellagra.—Cases: Charleston, S.C., 3; Savannah, 1; Memphis, 1; Montgomery, 1; New Orleans, 2; Shreveport, 1.
Typhus fever.—Cases: New York, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Two weeks ended June 17, 1933.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the 2 weeks ended June 17, 1933, as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis	1		1	3	2					7
Chicken pox		29	4	272	539	67	109	46	152	1,218
Diphtheria		2	1	26	9	8	3	1	3	53
Erysipelas				7	3				6	16
Influenza		27		5	2	1	17		51	103
Measles		2	13	394	219	3	4	2	95	732
Mumps		1			238	48	6		53	346
Paratyphoid fever					4			1		5
Pneumonia		7			6		12		9	34
Poliomyelitis				5	2	1				8
Scarlet fever		5	7	78	140	16	21	7	46	320
Smallpox							6			6
Trachoma							1		35	36
Tuberculosis	1	2	17	106	61	17	92	1	30	327
Typhoid fever		1	3	36	15	5	3		3	66
Undulant fever					5				1	6
Whooping cough		10		167	240	93	16	7	47	580

CUBA

Habana—Communicable diseases—Four weeks ended June 17, 1933.—During the 4 weeks ended June 17, 1933, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	5	1	Rabies	1	1
Leprosy	2	1	Tuberculosis	20	
Malaria	6		Typhoid fever	7	3

Provinces—Communicable diseases—Four weeks ended May 27, 1933.—During the 4 weeks ended May 27, 1933, cases of certain communicable diseases were reported in the provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Chicken pox		6		1	6	4	17
Diphtheria		7		1	1	2	11
Malaria		13	13	34	6	3	69
Measles		4		8	9	4	25
Scarlet fever		3					3
Tuberculosis		22	33	31	34	30	150
Typhoid fever	6	12	2	22	11	14	67

GREAT BRITAIN

England and Wales—Vital statistics—January-March 1933.—During the first quarter of the year 1933, 148,675 births and 170,002 deaths were registered in England and Wales. The following statistics are taken from the Quarterly Return of Births, Deaths, and Marriages, issued by the Registrar-General of England and Wales. The figures are provisional.

Birth and death rates in England and Wales, January to March 1933

Annual rates per 1,000 population:		Annual rates per 1,000 population—Contd.	
Live births	15.0	Deaths from—Continued.	
Stillbirths	.67	Typhoid and paratyphoid fever	0.00
Deaths, all causes	17.2	Violence	.54
Deaths from—		Whooping cough	.10
Diphtheria	0.6	Deaths per 1,000 live births:	
Influenza	2.03	Diarrhea and enteritis (under 2 years)	5.7
Measles	.06	Total deaths under 1 year	84.0
Scarlet fever	.02		

England and Wales—Infectious diseases—Thirteen weeks ended April 1, 1933.—During the 13 weeks ended April 1, 1933, cases of certain infectious diseases were reported in England and Wales as follows:

Disease	Cases	Disease	Cases
Diphtheria	10,242	Puerperal pyrexia	1,632
Ophthalmia neonatorum	1,034	Scarlet fever	23,358
Pneumonia	34,120	Smallpox	228
Puerperal fever	505	Typhoid fever	214

PUERTO RICO

Communicable diseases—Four weeks ended June 17, 1933.—During the 4 weeks ended June 17, 1933, cases of certain communicable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Chicken pox	67	Paratyphoid fever	2
Diphtheria	37	Pellagra	4
Dysentery	214	Syphilis	17
Erysipelas	5	Tetanus	11
Filariasis	5	Tetanus, infantile	3
Influenza	63	Trachoma	6
Malaria	1,791	Tuberculosis	404
Measles	180	Typhoid fever	61
Mumps	50	Whooping cough	127
Ophthalmia neonatorum	6		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

(NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for June 30, 1933, pp. 776-786. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued July 28, 1933, and thereafter, at least for the time being, in the issue published on the last Friday of each month.)

Cholera

Philippine Islands.—During the week ended July 1, 1933, cholera was reported in the Philippine Islands as follows: Province of Cebu,

Santa Fe, 2 cases, 2 deaths; Province of Occidental Negros, San Carlos, 5 cases, 6 deaths.

India.—During the week ended June 24, 1933, cholera was reported in certain cities in India as follows: Bombay, 1 case; Rangoon, 1 case and 1 death.

Plague

India.—During the week ended June 24, 1933, 1 case of plague with 1 death was reported at Rangoon, India.

Iraq.—During the week ended June 24, 1933, 1 case of plague was reported at Baghdad, Iraq.

Typhus Fever

Egypt.—During the week ended June 24, 1933, Alexandria, Egypt, reported 3 cases of typhus fever with 2 deaths from the same cause.

Yellow Fever

Ivory Coast.—Under date of June 21, 1933, 1 case of yellow fever was reported at Buafle, and on June 16, 1933, a fatal suspected case was reported at Gagnoa.

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